



Research SPOTLIGHT

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Texas Drought

Although drought may be defined in more than one way, all definitions of drought concur that a drought is characterized or caused by deficient rainfall. Depending on the landscape, the impact of a drought may be felt after a few months of deficient rainfall or after several years and may not be resolved for months or years. In East Texas, a shortage of precipitation can create a drought in a matter of months, while in West Texas, a drought is often not acknowledged until years of insufficient rainfall have occurred.

Droughts are a naturally occurring hazard of nature that may occur in four phases: meteorological, agricultural (vegetative), hydrological, and socioeconomic. A meteorological drought is simply a period of lower than normal rainfall. If the meteorological drought continues, an agricultural drought can occur when plants, crops, and wildlife are negatively affected. An extended meteorological drought becomes a hydrological drought when the levels of lakes, rivers, stream flow, and wells are impacted. Finally, a socioeconomic drought occurs when physical water shortages start to affect the health, well being, and quality of human life, or when the drought starts to affect the supply and demand of an economic product. One good rainfall may attenuate a meteorological drought, but recovery from a more extended vegetative, hydrological, or socioeconomic drought may require multiple years of consistently sufficient rainfall until the levels of lakes, rivers, and reservoirs return to normal.

In Texas, drought is recurrent and frequently widespread and can cover several regional climatic areas. Texas has suffered notable periods of drought since the 1930s, and drought conditions in 1996 caused greater economic losses to agriculture than any previously recorded one-year drought event. The drought of 1998 caused agricultural impacts slightly higher than those recorded in 1996, and in 1999, drought conditions returned.

The Drought Preparedness Council (DPC) was created with the enactment of H.B. 2660, 76th Legislature, 1999. The DPC was required to develop a comprehensive State Drought Preparedness Plan (SDPP) that provides for systematic data collection and analysis and the dissemination of drought-related information; an organizational structure that defines the duties and responsibilities of and assures information flow among all levels of government; an inventory of state and federal programs related to drought emergencies; a mechanism to improve the timely and accurate assessment of drought impact; and provision of accurate and timely information to the media.

The SDPP identifies the local, state, federal, and private sector entities that are involved with state drought management and defines their responsibilities; defines a process to be followed in addressing drought-related activities, including monitoring, impact assessment, and response; identifies long-term and short-term activities that can be implemented to prevent and mitigate drought impacts; and acts as a catalyst for creation and implementation of local drought planning and response efforts. The DPC is intended to complement the State Water Plan and ongoing water resource planning efforts and includes the following categories among its recommendations: drought monitoring, impact assessment, research and educational programs, and drought mitigation strategies.

The DPC recommends the modernization of the statewide environmental monitoring and forecasting system and the enhancement of methods for passing drought-related information on to those who are vulnerable to drought. The SDPP also includes recommendations for the coordination of efficient and timely assessment impacts, more timely economic impact assessment, and the enhancement of coordinated statewide response to drought. The DPC found that research and

education programs should include educational programs for drought awareness, support for ongoing research, and the use of media in informing the public about drought management options and activities. Among drought mitigation strategies, the SDPP includes recommendations for an increase in the educational emphasis given to forest and range management practices and the establishment of stronger incentives for private water conservation. The SDPP also includes recommendations relating to infrastructure improvements for the more efficient transfer of water in agricultural, municipal, and industrial uses. The SDPP encourages water-efficient land use and development practices and the coordinated drought response activities among neighboring water systems, with particular emphasis on water use restrictions.

On January 19, 2006, Governor Perry declared a disaster in all 254 Texas counties due to severe drought conditions and requested that the United States Department of Agriculture Farm Service Agency provide disaster relief assistance for Texas farms and ranches that have suffered economic and physical losses.

On January 26, 2006, the Texas A&M University System Agriculture Program reported that Texas drought losses had reached “an estimated \$1.5 billion, fueled by high hay costs and extended supplemental feeding for livestock.”

On February 21, 2006, the *Christian Science Monitor* reported that with 2006 expected to be the driest year since 1956, many Texas ranchers are being forced to sell their cattle and battle extensive and disastrous wildfires, “skyrocketing hay

costs, and billions of dollars in agricultural losses.” *Christian Science Monitor* reporter Kris Axtman writes: “The cattle industry is in a particularly difficult position right now because ranchers typically prairie graze their cows all winter. But because rain has been so scarce, there has been little for the animals to eat, and ranchers have turned to expensive hay feeding.”

As of the second week in March of 2006, wildfires had scorched close to a million acres of the Texas Panhandle, destroying homes and ranches and killing an estimated 10,000 horses and cattle.

Even though droughts are a natural occurrence, human action or inaction can either help or hinder the situation. Overgrazing and overproduction of range land can deteriorate the topsoil, making the impact of drought more severe, whereas improved crop rotation and improved farm implements and irrigation technology, along with effective water conservation and distribution for a growing population, can lessen the effects of recurring drought conditions.

Although there may be no consensus as to how the state can better prepare for drought conditions, the state continues to be forced to find ways to mitigate the effects to daily life that reach far beyond farms and ranches. With widespread crop failure and loss of land resources resulting from water shortages, Texans must learn how to mitigate economic, job, and property losses and reduce the number of heat-related deaths.

—by Samm Osborn, SRC

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